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Nutrients removal performance and sludge properties using

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Abstract: Enhancement of nitrogen and phosphate removal using thermophilic fermentation slurry from food waste (FSFW) as external carbon source was investigated. Based on the batch tests, the soluble and particulate fractions of the FSFW acted as easily and slowly biodegradable carbon sources, respectively, and the fermented slurry showed the combined nutrients removal properties of soluble and solid organics. During the long-term operation of a sequencing batch reactor (SBR) with FSFW for wastewater treatment, the sludge particle size increased obviously, the bacterial metabolic capacity improved significantly, and some functional microorganisms were enriched selectively, which significantly promoted the nitrogen removal efficiency (approximately 90%) by enhancing the anoxic denitrification and simultaneous nitrification and denitrification (SND) processes. Moreover, high phosphate removal efficiency (above 98%) was achieved through the aerobic and anoxic phosphate accumulation processes. Thus, using the Download English Version:

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